INTERVIEW SUMMARY AND REMARKS/ARGUMENTS

Interview/Summary

The examiner graciously agreed to a telephone interview, even though the application is currently under Final Rejection. The interview was held Mar. 23, 2007 at 3:30 pm EST. Attending were Examiner Abraham, the Examiner's supervisor and Applicants' agent Mark Rodgers.

Applicants presented video clips showing operation of the novel seat, and applicants' agent described the elements in the clams that contribute to the operation. Applicants feel the examiners fully understand the operation of the seat.

Applicants' agent then stated that the cited reference, Bayley, used by the examiner as the basis for the 102 rejection, only contained one element in Applicants' claim 1, the rollover sensor. Bayley does not contain the dual mode motor, the alternate power supply, and these elements are not adapted to operate in high speed mode during a rollover accident. The examiners' reply is that all of these elements are rendered inherent by evidence in the Yokota reference. Although other issues were discussed, such as why applicants stress reclining the seat in arguments, but do not have this limitation in the broad claim, the key point in the examiners' reasoning for a 102 rejection is that the elements of high power/high speed motor operations in an emergency are beyond obvious, since no combination of Bayley and Yokota is invoked. Based on the material in Yokota, the examiners feel that the elements in Applicants' claim 1 have no standing as limitations and can therefore be dismissed.

Agreement was not reached. However Applicants do not agree with, but now understand the Examiners position relative to invoking Yokota. This position was not clear to Applicants before the interview.

Remarks/Arguments

Because the nature of the reasoning used in invoking Yokota to support what appeared to be a completely invalid 102 rejection was not understood by the Applicants, the rejection was not fully addressed in the reply and amendment previously filed or in arguments presented during

the interview. For the record, Applicants feel that is unusual to base a 102 rejection on two references. Although Applicants now understand how Yokota is being used, the reasoning behind invoking inherency based on Yokota was not and is still not at all apparent to Applicants. Final Rejection based on the unusual reasoning seems inappropriate. However, Appeal is time-consuming and expensive, so Applicants will take at face value that they did not address the Examiners rejection, and will file an RCE along with this reply to establish their right to amend and present arguments now that the rejection is understood.

Also for the record, Applicants have had previous experience with this examiner and are confident she understands the technology in this field. Yet Applicants do not just disagree with the rejection, they fail to see any relevance in the inherency reasoning, indicating a continued disconnect in how the two parties perceive the invention. Applicants feel the lack of common understanding between the Examiner and themselves on this issue could be that the patent documents cited by the examiner may all be intended to add safety features by designing them into the vehicle. Therefore, adequate power to drive actuators of adequate speed could possibly be considered inherent features for a new vehicle design intended to support those features from the onset. The Applicants are addressing the need to, in a minimally difficult fashion from the auto manufacturers standpoint, add a safety feature into a vehicle that does not by design possess either the adequate actuator or have the necessary power available where needed to drive that actuator in the rollover condition. So novel solutions must be found that would not be apparent or necessarily even desirable, much less inherent, for a ground-up vehicle design. Applicants will elaborate in the following arguments.

To review the operation of Applicants invention, it is vital to understand that the problem solved is the need to move (recline is most important type of move) a large, heavy object, the seat plus occupant, a significant distance in a short amount if time, in an environment where an adequate actuator and the power necessary to accomplish such a move are not typically available. Further, it is necessary to accomplish this operation without unduly modifying existing automobile interior and seat designs for the case of a powered recliner seat. Otherwise the feature will have a difficult time getting adopted by manufacturers. The gear train of a powered recliner is sufficiently sturdy and fully integrated, that the only practical

way to recline the seat is to use the motor and gear train already in place. Any other approach (such as Andersson) requires too much redesign and is unlikely to ever be used. So the novel elements found in the invention and the problem solved thereby are:

1. Dual mode motor, low power/low speed mode and high power/high speed mode, which can be used in place of existing recliner motors (preferably drop in replacement) and operate using existing electrical system for normal reclining operation. Thus existing seat models, gear train and electrical systems can be used as is for normal operation.
2. A supplemental power source, capable of delivering a much higher amount of power for a short time than is available in most existing automobile interior power systems. This power source is preferably mounted in the seat (there is plenty of room in most seat designs). Thus the interior low power (typically 20 amps or less) bus system found in almost all automobiles can be left as is, and the high power cabling from the supplemental power source to the motor can be local to the seat, requiring little or no redesign. In fact for many seats, both dual mode motor, supplemental source and local cabling are easily retro-fittable.
3. Logic to, for a short time, power the dual mode motor from the supplemental source instead of the standard power bus in the event of a rollover, to accomplish rapid movement (reclining) of the seat.

The seat shown in the video clips presented at the interview is an example of a retrofittable seat containing all these elements and accomplishing the safety and applicability goals of the invention. The dual mode motor replaces the standard recliner motor with no seat modification, and the supplemental power supply, roll sensor and electronics are packaged in a small enclosure which mounts easily to the bottom of the seat. The high power cabling is local to the seat. Thus this enhanced seat can be dropped into a vehicle interior with no changes to the seat mounting configuration, normal seat operation and existing low current interior power bus yet fully achieve the required performance in a rollover accident.

The examiner does not appear to question that these elements are not found in Bayley, but she asserts they can be dismissed entirely due to evidence in Yokota. Applicants strongly disagree.

First, Yokota describes a ground-up automotive design, incorporating a multitude of safety features, such as airbags in the engine compartment, retractable wheel columns, elaborate sensor and signal processors and the like, which are not found in existing auto models. So Yokota is not solving the very real problem of practically adding a safety feature into an existing design. Thus when Yokota addresses issues such as high and low power modes for safety actuators, there is never any indication of where the power comes from. What is inherent in Yokota, is the safety design is ground-up so whatever power and type of actuator needed is assumed available, and no details are provided. Since that is absolutely not the case for existing models, nothing in Yokota can be considered as rendering inherent the elements needed to address problems he does not have or even hint at. As pointed out above, most of the cited references also assume the latitude of significant re-design. It is also possible that the cited references aren't fully functional. Bayley discloses closing the power windows during a rollover. Most existing power windows will not close quickly enough for this feature to be effective. Yet one would not generally find super fast powered windows desirable in normal operation. This is a tricky design issue as applying higher power is not necessarily a good solution for a window mechanism. One cannot assume that the disclosure of Bayley, or Yokota for that matter, provide any inherent guidance on this type of issue even for a new design, much less how to solve such an issue for an existing vehicle design.

Secondly, the main thrust of Yokota is to more gently apply safety devices such as airbags, belt tensioners and the like to smaller and more fragile passengers. The keys to achieving this goal are to detect a collision before it happens, so that the occupant may be slowly and gently re-positioned and restrained, and to measure parameters of the passengers with sensors in order to apply less forceful restraint for smaller passengers. With this clearly stated object in mind reading Yokota leaves only one conclusion; although emergency power is assumed available when and where needed from unspecified sources, the real thrust of Yokota is to use less power to actuate safety devices than is conventionally available. This is exactly the opposite of the operation of Applicants' invention.

Evidence to support this conclusion is found throughout Yokota, including the passages cited by the examiner:

Col 3, 63-67 and Col 4 9-13 and 26-29 ".... function in a moderate mode.....without always using a momentary, actuating high-power driving device" Yokota teaches that for each type of safety device, high power actuation is preferably to be avoided by starting the actuation early.

Col 4, 13-15 adding "....device can be miniaturized...restrains an occupant before the movement." Obviously, Yokota aims to eliminate the need for high power actuation entirely by anticipating the collision, allowing for use of smaller, lower power safety actuators.

Col 5 53-57, the part of Yokota most relevant to Applicants' invention, teaches moving a seat in small stages made possible anticipating the collision, exactly the opposite of Applicants.

Nothing in Yokota applies to Applicant's situation:

1. A rollover accident, unlike a collision, cannot be reliably anticipated. Until a certain rate of roll is achieved, the vehicle may not roll, and after it is achieved the vehicle will likely roll no matter what for most existing vehicle designs. At that point, time is strictly limited to perform safety adjustments.
2. To the extent there is any description of high-power/low power actuation, Yokota is aimed at eliminating the need for the high-power mode, exactly the opposite of Applicants.
3. There is no suggestion in Yokota as to where the power comes from, or how to make the need for normal power/emergency power compatible with existing vehicle designs where only low power is available to support existing non-emergency operation. To the extent inherency can be assumed, it is that for a ground-up design the power and actuator configurations needed may be available, although the Bayley windows very much cast doubt on such inherency. There is no inherency applicable to a vehicle design that does not have the needed elements designed in and requires a novel approach to add the features in a minimally intrusive fashion.

So to conclude the analysis of Yokota, there is no basis for applying Yokota to dismiss Applicants' claim elements. Applicants feel for the above reasons that Yokota is at complete

cross purposes to Applicants invention, and provides no suggestion of the necessary elements detailed in applicant's claim 1, much less rendering those elements inherent. The possibly inherent concepts in Yokota and the other cited references would be straightforward, such as an adequate power bus to support safety features and adequately sized actuators. There would be no need to replace actuators with more exotic types or add power sources and the like. In fact it is inconvenient and costly to do so if you are starting from scratch with the safety features as part of the baseline. However, ground up vehicle designs incorporating fully designed in new safety features happen slowly or not at all.

The combination of elements in Applicants' claim 1 forms the basis for a totally practical, important new safety feature that can be added to existing designs with no redesign at all of any item but the seat itself, and very little there. To Applicants knowledge, they have the only working model of a powered seat with the required capability, and certainly the only design that can be quickly implemented at the seat supplier level to existing common seat designs. These elements are certainly not found in Bayley, and can not be rendered inherent by Yokota.

As to other issues discussed at the interview and in the Examiner's Final action, the Examiner rightly questions why Applicants stress the reclining function in all previously presented written and oral arguments, but do not include it as a limitation in the broadest claim. The reclining move is the largest of the possible seat moves, and cannot be accomplished with the normal mode recliner motor quickly enough. It is the most important for other reasons as well. There is not much room in most standard vehicles for vertical adjustment, so it may be possible to achieve this move at normal seat adjustment speeds. Bayley makes does not address this issue, again because he may be considering designing in any required features, and the applicants have not gathered definitive data. Or, like the windows, he may not even be aware of the problem. In any case, the limited range of vertical adjustment makes a vertical move less effective. As far as lateral positioning, determining where to put the seat laterally in order to achieve the maximum reclines is complex, and may not always be implemented.

So the recline move is the most important. However, the novel features of the dual-mode motor and supplemental power supply apply equally to the vertical and lateral positioning motors, and may be advantageous despite the comments above. Moreover, some standard seats have a manual recline but powered vertical/lateral adjustment. Because the novel features, for the reasons given above, are novel for the other cases besides reclining, Applicants feel that claim1, and therefore claim 8, should be allowable in currently rejected form.

However, in deference to the Examiner's sensitivity to the reclining issue, the claims as currently amended are amenable to a restructuring depending on how the claims are allowed which could result in reclining being a required element. However, claim 1 in particular includes material which is also disclosed in a co-pending application directed more closely to the supplemental power supply. So if claims as finally allowed end up limited in this application to the reclining case, Applicants reserve the right to pursue claims for the broader case in the co-pending application.

Respectfully submitted,

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